Crisis Responder Pilots: Evaluation Plan

DRAFT

Washington State Institute for Public Policy

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Summary

The 2005 Legislature, in E2SSB 5763, directed the Department of Social and Health Services to establish two pilot sites where specially-trained crisis responders will investigate and have the authority to detain individuals who are considered "gravely disabled or presenting a likelihood of serious harm" due to mental illness, substance abuse, or both. The integration of mental health and substance abuse related crisis investigations and the establishment of secure detoxification facilities at the pilot sites are expected to improve the efficiency of evaluation and treatment and result in better outcomes for those involuntarily detained under this new law. The pilots are expected to begin operations in March 2006. The Legislature also directed the Washington State Institute for Public Policy to determine if the pilots cost-effectively improve client mental health/chemical dependency evaluation, treatment, and outcomes. A preliminary report by the Institute is due to the Legislature in December 2007. The final report is to be completed by September 2008.

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WASHINGTON STATE INSTITUTE FOR PUBLIC POLICY

Mission

The Washington Legislature created the Washington State Institute for Public Policy in 1983. A Board of Directors—representing the legislature, the governor, and public universities—governs the Institute, hires the director, and guides the development of all activities.

The Institute's mission is to carry out practical research, at legislative direction, on issues of importance to Washington State. The Institute conducts research activities using its own policy analysts, academic specialists from universities, and consultants. New activities grow out of requests from the Washington legislature and executive branch agencies, often directed through legislation. Institute staff work closely with legislators, as well as legislative, executive, and state agency staff to define and conduct research on appropriate state public policy topics.

Current assignments include projects in welfare reform, criminal justice, education, youth violence, and social services.

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SECTION I: INTRODUCTION

Finding that "a substantial number of persons have co-occurring mental and substance abuse disorders and that identification and integrated treatment of co-occurring disorders is critical to successful outcomes and recovery," the Legislature passed E2SSB 5763, the *Omnibus Treatment of Mental and Substance Abuse Disorders Act of 2005*. The new law addresses case management, the Involuntary Treatment Act, best practices, criminal justice, treatment gaps, and legal and funding issues concerning the coordinated treatment of substance abuse and mental health in Washington State.

The law also directs the Department of Social and Health Services (DSHS) to establish two Crisis Response Pilot (CRP) sites.[1] At county-administered CRP sites, designated crisis responders have the authority to investigate and detain individuals up to 72 hours for mental health and/or chemical dependency disorders that render the person, according to the statute, "gravely disabled or presenting a likelihood of serious harm." Designated crisis responders will be local mental health professionals who have undergone specialized chemical dependency training.

The CRP sites also have the authority to request longer-term commitments of detainees. Individuals detained for chemical dependency issues may be committed to a 14-day secure detoxification facility operated by the CRP; if conditions persist, persons may be detained for another 60 days in a secure facility. Detained individuals with mental disorders may be committed to 14-day evaluation and treatment facilities, and if problems persist, for 90 days at a state hospital. In non-CRP sites (the rest of the state), mental health (MH) and chemical dependency (CD) investigations are not necessarily coordinated, and facilities and involuntary treatment options for CD clients are limited. Exhibit 1 illustrates the alternative detention and commitment processes in pilot and non-pilot counties.

In 2005, DSHS officials solicited proposals from Washington State's counties and Regional Support Networks (RSNs). After reviewing the proposals and interviewing finalists, DSHS designated Pierce County and the North Sound RSN (Whatcom, Skagit, Snohomish, San Juan, and Island Counties) as the CRP sites. The pilots are expected to begin operations in March 2006.

The Legislature directed the Washington State Institute for Public Policy (Institute) to determine if the pilots cost-effectively improve client MH/CD evaluation and treatment and their outcomes. A preliminary report by the Institute is due to the Legislature in December

[1] The pilots are built upon the recommendations of the Cross-System Crisis Response Task Force: See *Cross-System Crisis Response Project, Recommendations for Improvements to Crisis Response*, June 2004, Olympia: Prepared by the Cross-System Crisis Response Task Force at the request of the Association of County Human Services and the Department of Social and Health Services.

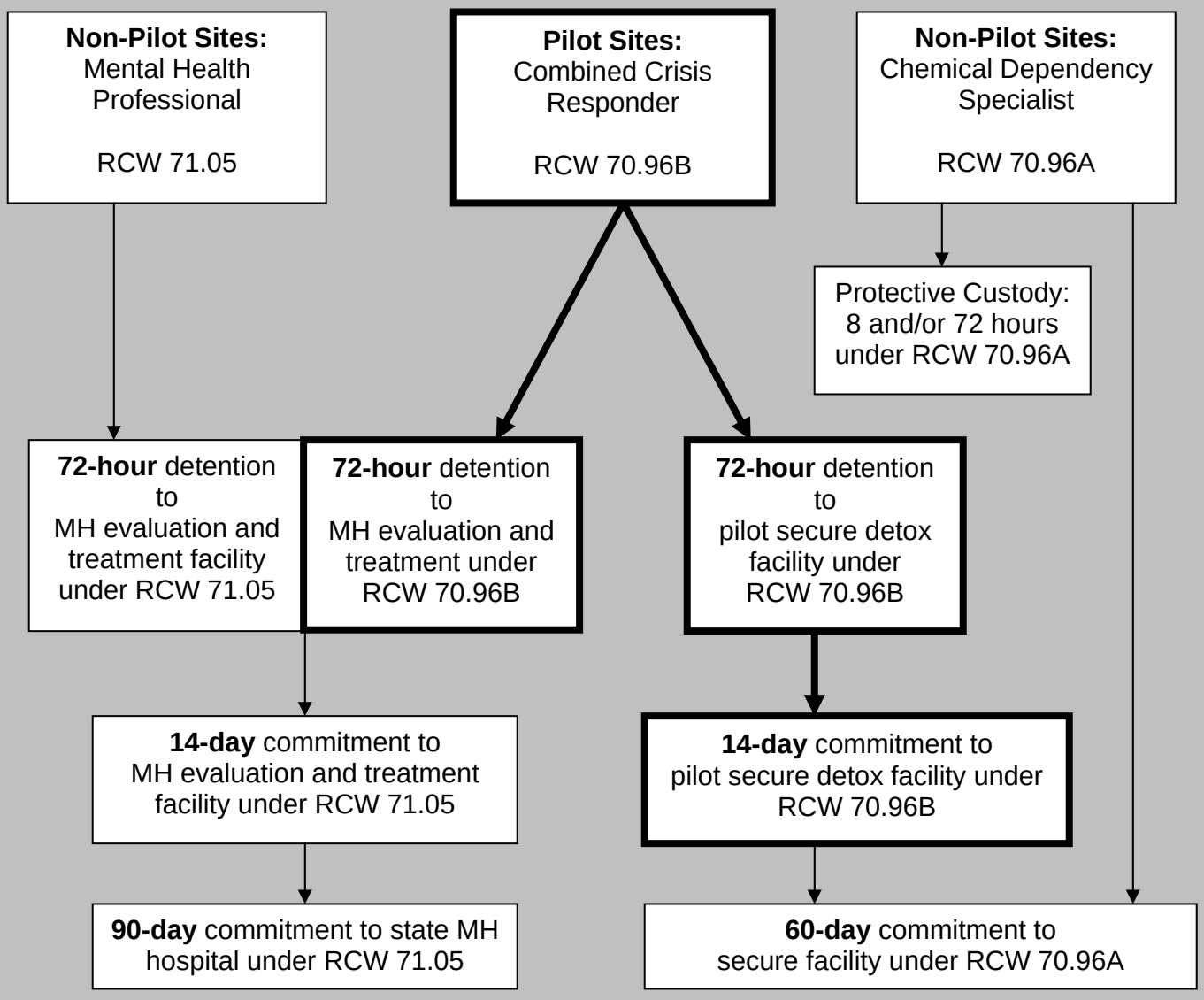
2007. The final report is to be completed by September 2008. The Institute has convened a technical advisory group to review and comment on this evaluation plan and subsequent analyses. The specific legislative language is as follows:

> *Sec. 217 (1) The Washington state institute for public policy shall evaluate the pilot programs and make a preliminary report to appropriate committees of the legislature by December 1, 2007, and a final report by September 30, 2008.*
>
> *(2) The evaluation of the pilot programs shall include:*
> *a. Whether the designated crisis responder pilot program:*
> *i. Has increased efficiency of evaluation and treatment of persons involuntarily detained for seventy-two hours;*
> *ii. Is cost-effective;*
> *iii. Results in better outcomes for persons involuntarily detained;*
> *iv. Increased the effectiveness of the crisis response system in the pilot catchment areas;*
>
> *b. The effectiveness of providing a single chapter in the Revised Code of Washington to address initial detention of persons with mental disorders or chemical dependency, in crisis response situations and the likelihood of effectiveness of providing a single, comprehensive involuntary treatment act;*

Exhibit 1
Investigation, Detention, and Commitment Flowchart*

The investigation, detention, and commitment processes under pilot, Mental Health, and Chemical Dependency statutes. Pilots are distinguished from the existing system by:

- Combining mental health (MH) and chemical dependency (CD) crisis responders;
- Creating 72-hour detention and 14-day commitment processes for CD, MH, and Co-occurring disorders;
- Operating secure detoxification facilities; and
- Retaining current statutes for long-term commitment.



*The bold lines represent new authority and/or facilities unique to the pilot sites. The chart does not show cross-program or less-restrictive referrals.

SECTION II: EVALUATION APPROACH

This section discusses the approach the Institute intends to take to evaluate the Crisis Response Pilots (CRP). Research questions and outcome measures are listed first, then the overall research strategy is discussed, followed by a description of the cost-benefit analysis. Finally, the principal data sources are identified.

1. Research Questions and Outcome Measures

The evaluation has two goals. First, do the pilots cost-effectively improve the efficiency of evaluation and treatment and result in better outcomes for individuals involuntarily detained under the new statute? Second, what will be the consequences of implementing a crisis response system statewide? This document describes the Institute's approach to the first evaluation goal, which will be met by answering the following questions:[2]

Do the CRPs improve the efficiency of evaluation and treatment? To answer this question, the study will describe the costs associated with the program and determine if the pilots result in more appropriate (as established by MH and CD experts) diagnoses, referrals, and services; specifically:

- What individual and administrative characteristics predict CRP investigations?
- What individual and administrative characteristics predict the timing, likelihood, and type of detentions/commitments (MH, secure detoxification, 72-hour, 14- to 90-day, voluntary, or involuntary)?
- What changes in MH and CD diagnoses, referrals, and services are attributable to CRP investigations, and are they more appropriate?
- What changes in MH and CD diagnoses, referrals, and services are attributable to detentions at a CRP secure detoxification facility, and are they more appropriate?
- Relative to the comparison group, what differences in per-person costs are associated with CRP investigations and subsequent detentions, services, and treatments attributable to the program?[3]

[2] The legislation does not specify the outcomes to be evaluated by the Institute. The legislature, however, lists outcomes of interest in Sec. 220 (b) (c) (d) of the bill.
[3] If possible, costs will be itemized: transportation, legal, evaluation, treatment, secure detox, etc.

Do the CRPs improve individual outcomes? To answer this question, the study will describe the differences in key MH, CD, medical, crime, and other outcomes attributable to the program; specifically, we will determine the extent to which all CRP investigations or CRP investigations that result in detentions/commitments influence the answers to the questions in Exhibit 2.[4] In addition to evaluating the overall impact of the program, the analyses will focus on the subgroups represented in the table: clients with Mental Health problems, clients with Chemical Dependency problems, and clients with both CD and MH problems.

Exhibit 2
Client Subgroup Analyses

How much do CRP investigations and CRP detentions:	Type of Client			
	All	**MH**	**CD**	**MH & CD**
Improve client health status (according to subsequent diagnoses or use of medical services)?				
Reduce subsequent detoxification episodes or CD services that indicate a worsening condition?				
Reduce mortality rates?				
Reduce emergency room use and avoidable hospitalizations?				
Produce more stable living situations?				
Reduce subsequent MH/CD investigations?				
Reduce subsequent arrests, convictions, and court appearances?				
Improve future employment and earnings?				
Reduce long-run expenditures on publicly funded medical, MH, CD, and other services?				

[4] Each outcome of interest will be modeled econometrically, where the outcome is a function of CPR/non-CRP status and a variety of other demographic, diagnostic, and other observable differences between the CRP and non-CRP individuals.

2. Evaluation Design

General Research Strategy. The evaluation strategy is intended to provide the Legislature and executive agencies with a bottom-line assessment of the following question: Do the pilots cost-effectively improve client evaluation, treatment, and outcomes. To accomplish this, the study will examine the experiences of individuals who are investigated by crisis responders in pilot sites (CRP group) and compare them with similar individuals who are not subject to crisis responder authority or services (comparison group). Linked administrative information systems will be the primary source of evaluation data for both the CRP and comparison groups.

The changes observed in individuals from the CRP group will be compared with changes observed in individuals who receive services as usual (comparison group). Multivariate statistical analyses will determine how much of the observed differences between the two groups, if any, may be attributed to the CRP and its components. Changes in subsequent MH and CD treatment and referrals, detoxification episodes, emergency room visits, criminal justice involvement, health care utilization, and other relevant outcomes will be examined.

In random-assignment studies—the gold-standard of program evaluation—program impacts are simply the differences in treatment group and comparison group outcomes. Neither the CRP sites nor their clients were selected at random from pools of statistically similar sites or clients. Therefore, selection bias is an important consideration in this evaluation's quasi-experimental design. In addition to a careful selection of relevant comparison groups, standard multivariate statistical techniques, such as propensity score matching, instrumental variables, and difference-in-difference estimation, will be employed to minimize selection bias on observed and unobserved variables.[5]

In addition to providing information on outcomes, linked administrative records will also supply individual-level data on demographics, MH and CD history, criminal history, and other relevant factors. These data will be used to statistically control for key differences between the CRP and control groups in the multivariate analyses.

The CRP sites are scheduled to begin operation in March 2006. The final report, due September 2008, will be based on the experiences of clients with one to 24 months of follow-up data. The evaluation will be based on a limited number of observations made over a relatively short period of time.

[5] William Greene, 2000, *Econometric Analysis (5th edition),* Edgewood Cliffs, New Jersey: Prentice Hall. B. Pelissier, W. Rhodes, G. Gaes, S. Camp, J. O'Neil, S. Wallace, and W. Saylor, 1998, *Alternative Solutions to the Problem of Selection Bias in an Analysis of Federal Residential Drug Treatment Programs,* Washington, DC: U.S. Bureau of Prisons.

Cross-Site and Within-Site Comparison Groups. Program outcomes will be evaluated by comparing the experiences of clients at CRP sites with similar clients—the comparison group—who are not exposed to the program. However, a specific comparison group will be selected only after the program has been implemented and when the data collected on CRP clients are sufficient to describe the characteristics of a relevant comparison group. The definition of a comparison group will be refined throughout the first year of implementation as researchers learn more about actual CRP clients. Eventually, two comparison groups will created, one comprising a contemporaneous sample of individuals from non-CRP locales and another of individuals who were in the CRP sites at least 18 months prior to implementation of the program.

The comparison group will be selected from existing administrative data sources based on similarities in demographics, location, MH and CD histories, diagnoses, and other characteristics. For the outcomes analyses, administrative data will also be used to statistically adjust for observed individual-level differences between the CRP and comparison groups (more than one comparison group may be created for the evaluation).

Location is an important factor when considering the composition of a comparison group. CRP sites differ from other locations because they have crisis responders, secure detoxification facilities, and statutory authority granted under the new law. CRP and non-CRP sites, however, also differ with respect to the populations served; geography; availability of resources and services; the level of collaboration among MH, CD, and criminal justice communities; competencies; and other factors (such as the presence of other programs that might affect the same clients). Aggregated administrative data, existing statewide survey data, and interviews with MH and CD experts and program administrators will help to identify geographic areas comparable to the CRP sites.

County-Level Analysis. A potential weakness in using administrative data to identify a comparison group is that it only allows for comparisons between clients represented in state administrative data systems. We will be unable to describe, for example, individuals in comparison sites who experience a crisis but who are never investigated by a MH or CD professional and who do not receive publicly funded services similar to those used by CRP site clients.

To address this issue, an alternative analytical approach that estimates the county- or region-wide (rather than individual-level) outcomes associated with CRP will also be attempted. Chronological information, constructed by the Institute, on the degree to which CRP or other MH or CD programs are implemented in different locations across state will be combined with data controlling for local area social, economic, demographic, and other conditions. In this type of “Fixed Effects” model, dummy variables included for each location in Washington and for each year of the analysis help control for underlying

differences in particular locales in addition to statewide year-to-year changes.[6] Statistical tests will determine if changes in key geographic-level outcomes are associated with the implementation of the pilots to a significant degree. This approach may be limited by the relatively short period of time and locations associated with the pilots.

Cost-Benefit Analysis. The costs and benefits associated with treatment efficiencies and improved outcomes associated with the CRP sites will be combined to form an overall assessment of the program's cost effectiveness. To the extent possible, these relatively short-run estimates of costs and benefits will be extrapolated over the expected lifetime of the clients, providing policy makers with an estimate of the long-term net present value of the program.[7]

The Institute will estimate what a *unit* of a given outcome is worth (in present-value terms) to Washington taxpayers. In the case of crime outcomes, for example, this basic accounting includes both state and local marginal criminal justice costs (operating and capital) and case processing and sentencing probabilities in Washington.[8] The model then applies estimates of the value per victimization (again, in present-value terms) to the estimated number of victimizations avoided. Thus, the benefit side of the cost-benefit model includes both taxpayer resources saved and victimization costs avoided. Additionally, similar estimates may be achieved regarding the value of employment, health, substance abuse, and other outcomes. As these effects are successfully added to the Institute's cost-benefit model, they will be included in the benefits of any outcomes attributed to the pilots.

After estimating the benefits, the Institute's model subtracts the program costs from the benefits. The Institute will estimate the costs of implementing the CRP sites. Once all benefits and costs are estimated, it is possible to calculate standard investment measures such as benefit-to-cost ratios, net present values, internal rates of return, and break-even points.

[6] Standard references for these types of studies include Cheng Hsiao, 1986, *Analysis of Panel Data,* New York: Cambridge University Press. Robert S. Pindyck and Daniel L. Rubinfeld, 1991, *Econometric Models and Economic Forecasts,* New York: McGraw-Hill.

[7] The approach to calculating long-run costs and benefits is described in the technical appendix to Steve Aos, Roxanne Lieb, Jim Mayfield, Marna Miller, and Annie Pennucci, 2004, *Benefits and Costs of Prevention and Early Intervention Programs for Youth*, Olympia: Washington State Institute for Public Policy.

[8] Since most crime *units* are officially recorded measures such as the number of arrests, the model also estimates the number of crimes that are likely to be associated with the recorded crime units.

3. Data Sources

Administrative Information Systems

The evaluation will rely primarily on client-level data available through state administrative information systems. These data will be augmented with information collected by CRP personnel at intake, key informant interviews, and follow-up surveys of CRP clients. The following administrative data sources will provide information on individuals before and after implementation of the pilots:

- **DSHS Mental Health Division Encounter Data:** Investigations, petitions and commitments, services, providers, diagnoses, medications, global assessment of functioning, and demographics.

- **DSHS TARGET:** Demographics, diagnoses, service providers, detoxification episodes, and CD referrals and treatment.

- **Criminal Justice System (CJS):** Washington State criminal convictions and arrests tracked by the Institute.

- **DSHS Medicaid Management Information System:** Medicaid eligibility, diagnoses, procedures, prescriptions, providers, hospitalizations and emergency admissions, and payments.

- **Comprehensive Hospital Abstract Reporting System (CHARS):** Hospital inpatient discharge information, emergency care, demographics, charges, diagnoses, and procedures.

- **DOH Vital Records:** Washington State Department of Health records on mortality.

- **Employment Security Department UI Wage and Hours File:** Earnings and hours worked (if in covered employment in Washington State).

Researchers will use these linked administrative data to compile a detailed record of individuals subject to CRP site investigations and of their comparison group counterparts. The data will describe the following characteristics both historically and during the outcome period for clients who appear in administrative data:

- Demographics, living situation, and employment;
- MH/CD investigations, detentions/commitments, and detoxification episodes;
- Timing and frequency of investigations, petitions, and detentions/commitments;

- 72-hour, 14-day, 60-day (CD), or 90-day (MH) detentions/commitments;
- Voluntary/involuntary detentions/commitments;
- Source of CRP investigations: emergency room, jail, etc.;
- Publicly funded medical services and their associated diagnoses;
- Other hospital inpatient services, diagnoses, and costs;
- Emergency room visits;
- MH and CD diagnoses;
- MH and CD treatment and services;
- Criminal convictions and arrests; and
- Public expenditures itemized by service provided.

Administrative information systems are a highly efficient and less invasive source of evaluation data, but they have their limitations. First, because researchers must link the records of individuals across different information systems that use differing or inconsistent identifiers, some individuals may be mismatched with incorrect records or may appear to have no matches at all. Second, administrative data are not designed for the purpose of evaluation and may not include specific measures necessary to evaluate a program. Finally, some members of the study population may not appear in administrative data systems, not due to matching errors, but because they have never used public services.

The first two issues are relatively minor limitations: the matching problems will be reduced to acceptable levels through the use of well-tested matching algorithms developed specifically for these data; many of the key outcome measures of legislative interest are available in existing administrative data systems. The third issue, however, outcomes analysis for individuals who do not appear in administrative data systems (until they are subjected to an investigation) will be limited because no such individuals will be available for the comparison group. Further analysis of individuals investigated at CRP sites, but who do not appear in other administrative data systems, will help identify the potential biases this issue introduces to the study. This will not be a problem for a presumably large portion of individuals in the study population who are chronic recipients of publicly funded MH, CD, or medical services.

Interviews and Records Review

CRP Staff. Institute staff will interview key personnel at CRP sites (administrators, crisis responders, secure detox staff, and other professionals) about their experiences with program start-up and implementation, crisis responder training, the investigation and detention process, the experiences of clients in secure detox, the impact of the pilot on other services and clients, and the challenges and opportunities under the statute. To

itemize the costs of implementation and ongoing operations at the CRP sites, Institute staff will interview finance and other administrative personnel at the pilot sites in addition to reviewing financial records and contracts.

Community Stakeholders. To gather information about how the program influences other community resources, Institute staff will interview representatives of law enforcement, criminal justice, and emergency response systems to record their experiences with the program (for those in CRP sites). Institute staff will also interview these representatives in non-CRP sites.

MH and CD Professionals. Institute staff will conduct interviews with MH and CD treatment professionals to develop criteria (diagnostic and service history, medications, procedures, detox episodes, demographics, and other factors available in administrative data) that can be used to determine the appropriateness of referrals and treatments provided to clients subjected to CRP investigations. Based on these discussions, Institute staff will develop a prioritized list of modalities that are appropriate for clients given the available diagnostic data.

Client Survey

The Institute will design and administer a survey of individuals subject to CRP site investigations. The survey will measure the stability and quality of the client's living situation and collect information on client attitudes, health, and functional status. While such data are available in some administrative information systems, they are not routinely updated. The survey will collect this information one year after a benchmark crisis investigation.

For comparison purposes, the same survey will be conducted with a sample of individuals investigated in non-CRP sites, who will be selected based on demographics, location, MH and CD diagnoses, and other factors found to be associated with CRP investigations. Institute staff will implement the survey from March 2007 through March 2008.

Human Subjects Research Issues

The Institute will initiate, where necessary, a request of the Washington State Institutional Review Board for permission to access confidential information described in this proposal and to assure that the proposed client survey is carried out in accordance with Board guidelines. The Institute will also initiate data sharing and confidentiality agreements with agencies supplying administrative data for the study.

SECTION III: TIMETABLE FOR REPORTS TO THE LEGISLATURE

December 2007: Preliminary Report on First Year of Program Implementation. Based on client-level administrative data, this report will describe the characteristics of individuals investigated at the CRP sites and will include information on the following:

- The timing, location, and referral source of crisis investigations;
- Frequency and characteristics of detentions/commitments via the CRP;
- Prior MH/CD investigations, detentions/commitments, and detoxification episodes;
- History of publicly funded medical services and their associated diagnoses;
- Prior emergency room visits and hospitalizations;
- History of MH and CD diagnoses, referrals, and services;
- Prior criminal convictions and arrests;
- The dollar value of publicly funded services provided prior to the CRP investigation; and
- Demographics, living situations, and employment history.

In addition to describing the individuals subjected to CRP investigations and their subsequent detention status, this report will also describe start-up, operating, and legal costs associated with the program. Program outcomes and effectiveness will be addressed in the final report.

December 2008: Final Report on the Effectiveness of the Crisis Response Pilots. In addition to updating the material provided in the preliminary report, the final report will describe the impact of the CRP sites on client treatment, CD, MH, medical, criminal, employment, and other key outcomes. The costs and benefits (cost savings) of the program will be described in detail and will include an estimate of the long-term total benefits and costs expected if the program is implemented statewide. The final report will also reveal client assessments of their own situations and the experiences of CRP site staff and other community stakeholders.